



EPA Fact Sheet:

Asbestos Sampling in Libby, MT

EPA Information Center ☐ 501 Mineral Avenue, Libby, MT 59923 ☐ (406)293-6194
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Why is EPA sampling homes?

EPA's goal is to investigate whether people are currently being exposed to asbestos fibers at levels that will harm them. EPA investigators are currently working to determine whether vermiculite from the Libby mine that was brought into people's homes as insulation, dust on clothes or into yards and gardens as a soil conditioner contains high enough levels of asbestos fibers to cause health problems.

Sampling the air, dust, soil and insulation will help homeowners and EPA investigators determine whether asbestos is present in their homes.

Whose homes are being sampled?

In December 1999, EPA sampled 32 homes and 3 businesses. All sampling was conducted on a voluntary basis. EPA tried to get a broad geographic distribution around Libby.

In March and April, EPA again began sampling Libby residents' homes on a voluntary basis. Approximately 70 homes were targeted for sampling.

The March and April sampling events were more focused on:

- 1) Homes that are close to the former mine processing centers;
- 2) Homes of former mine workers or workers' families; and
- 3) Homes of people with asbestos-related illness who never worked at the mine or mine processing facilities.

How many homes will EPA sample?

EPA is taking a step-by-step approach. Each step in the sampling and analysis process will help determine if more sampling is needed.

At this time, EPA investigators have not been able to sample each residents' home who volunteered. The Agency appreciates community members volunteering and will keep the names and information on file for any potential future sampling efforts.

Who does the sampling?

While EPA is ultimately responsible for all the sampling, EPA is working with various contractors who have expertise with specific



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media such as air or soil.

- # Lockheed Martin, Inc. is sampling the air.
- # Certified asbestos specialists, contractors from Pacific Environmental Services, Inc. are sampling dust and vermiculite insulation and doing asbestos inspections at the time the samples are taken.
- # Camp Dresser & McKee Federal, Inc. are sampling the soil.

How are the samples taken?

Air - Samplers place pumps in a main living area of the house and they run for six hours. The pumps pull about 4,000 liters of air through a filter before automatically shutting off.

Soil - Samplers collected surface soil from yards, driveways and samples from gardens 12 inches deep. Samples are sent to the lab in an airtight jar.

Dust - Samplers use a "Microvac" to vacuum dust from three different places on a carpet and three different places from window sills.

Insulation - Samplers "grab" a handful of insulation material and place it in an airtight jar.

How are the samples analyzed?

- # Asbestos fibers in air are measured

using Transmission Electron Microscopy (TEM) to look directly at a portion of the air filter.

- # Asbestos fibers in dust are measured using (TEM) after an indirect preparation step. The indirect preparation involves dissolving the filter and removing everything but asbestos fibers.
- # To date, all soil and vermiculite insulation samples have been analyzed by Polarized Light Microscopy (PLM). In the future, EPA will use even more sensitive tools for these samples.

Transmission Electron Microscopy or TEM

Air or dust is drawn through a filter and any fibers in the air or dust are deposited on the filter. The filter is then placed under a powerful electron microscope, allowing the technician to observe both the type of fiber (asbestos versus some other fiber) and the size of the fiber (length and width).

Polarized Light Microscopy or PLM

A sample (soil or insulation) is placed on a slide and examined under a polarized light microscope. This microscope is not as powerful as a TEM, so the technician can only estimate the amount of asbestos in the sample, but can not count actual fibers or measure their size.

What is EPA looking for?

- # asbestos fibers
- # complete exposure pathways
- # the type of fiber
- # the size of the fibers

EPA is looking for asbestos fibers. If asbestos fibers are found in people's homes, EPA looks for how those fibers got there. Is it from vermiculite insulation? Is it from dust that is being recirculated in the heating system? Is it tracked in as soil from the driveway? These are all possible exposure pathways. EPA looks for complete exposure pathways i.e., a way for fibers to get from their source, into the air and into your body.

EPA looks for the type of asbestos fiber. The *tremolite-actinolite series* fibers and other amphibole mineral fibers are believed to be associated with the vermiculite mine. The most common form of asbestos used in consumer products i.e., roof shingles, pipe covering etc. is known as chrysotile.

EPA looks for the size of the asbestos fibers. Fibers are categorized as:

- # 10 microns or longer;
- # between 5 and 10 microns long; and
- # shorter than 5 microns long.

EPA is most interested in fibers greater than 5 microns in length and less than 0.5 microns in width. There are 25,400 microns in 1 inch.

How do we know that the sample results are good quality?

EPA uses a "Sampling and Quality Assurance Project Plan" as a guide for its Environmental Monitoring for Asbestos. The Plan describes how EPA will collect, handle, transport, analyze, and checked samples for accuracy. Samples must conform to the "Sampling and Quality Assurance Project Plan" accepted protocol before EPA will accept them. Sampling and analytical methods are nationally and internationally accepted. This detailed plan is available for review at the EPA Information Center in Libby.

For More Information

Community members are encouraged to stop by the EPA Information Center in downtown Libby at 501 Mineral Avenue or contact any of the team members listed below. The Information Center is open weekdays and is a good place to get more information, ask questions or express concerns. The phone number is (406) 293-6194.

EPA Contacts

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